

There are excellent reasons why American business and industry might be interested in using photovoltaics as part of their total energy package. The installations shown here represent some of these reasons. Also depicted here is PV on schools. There is a major push to incorporate PV on schools to educate the next generation of power consumers.

Perhaps the most important economic reason for businesses to consider PV is reduction of peak demand. Electric bills for most consumers represent kilowatt hours used; but large energy consumers are also billed for their peak power consumption during a demand period. If a company's peak demand coincides with a time when the sun is shining, then installing a PV system can reduce their demand, thereby possibly saving them money.

PV can also be an economic boon to a business that needs to power a sign where the grid is inaccessible or it is too expensive to remove asphalt or concrete.

Commercial entities also realize that incorporating some form of renewable energy can be a huge public relations gesture—as well as a way to help with a healthy environment. BP Solar's public awareness campaign with PV visible on their gas stations and educational kiosks at their front doors is a good example of this.



▽ Block Island, Rhode Island, scene of a 6kW ground-mounted system providing grid-connected and back-up emergency power. Block Island was the first post office in the Million Solar Roofs program. Integrator: Solar Works. [Photo courtesy ASE Americas, Inc.]



◁ This 6kW grid-connected system at a service station in Olney, Maryland, supplies 15 percent of the station's electrical needs. It is the first to use Solarex's MST43 thin film modules. [Photo courtesy Atlantic Solar]

▽ A 120kW array of ASE Americas 300-DG modules was installed by Applied Power Corporation at the Bentley Mills carpet factory in Southern California. APC (Lacey, Washington) also designed the installation, which is one of the largest industrial solar installations in the United States. Bentley Mills is a subsidiary of the Interface Group, a global provider of flooring products with a philosophy of sustainable manufacturing. [Photo courtesy ASE Americas, Inc.]



◁ This remote system powers Northern Colorado's Channel 9 news camera used to capture images of Public Service Company of Colorado's wind farm. The self-contained unit serves as a mount for a 900 watt PV array and houses the inverter, batteries, controls, and Channel 9's camera equipment. The hybrid system includes a 6.5kW back-up propane generator. [Photo courtesy Altair Energy]



△ This large 20kW system was designed and installed on the Houston Health Science Center by Planergy, Inc. *[Photo courtesy Planergy, Inc.]*



△ Montara Elementary School, first of 165 schools for Los Angeles Unified School District—the largest school district in the U.S.—sports a 4.8 kW school lunch shelter. Solar Utility, Inc. is the exclusive distributor of Uni-Solar's building-integrated roofing material as featured on this school. *[Photo courtesy Solar Utility, Inc.]*



△ The Western Area Power Authority building in Folsom, California, features 12kW Solarax, 12kW EPV, and Trace inverters on its line-tied PV system designed and installed by Solar Electrical Systems, Thousand Oaks, California. *[Photo courtesy Solar Electrical Systems]*



△ Mauna Lani Hotel and Bungalows, Kohala Coast, Hawaii. This unique 100kWp (75kWAC) solar electric tile system is believed to be the largest hotel PV system in the world. PowerLight Corporation, integrator, installed their commercial-scale PowerGuard system using ASE's PV modules, backed with insulating polystyrene foam. The project exemplifies the

flexibility of PV—serving as both an electricity generator and a building material. The roof covers 10,000 square feet and is expected to offset more than 14,000 barrels of oil during its life. *[Photos courtesy ASE Americas, Inc. and Sandia National Laboratories (inset)]*



△ An ancient order of Benedictine monks thrives in the modern world. The Monastery of Christ in the Desert is able to pursue a high-tech livelihood—designing web sites—with power brought by Siemens modules. The Brothers use electricity from PV to power 15 computers for web site designs, including the Vatican's web site. Connecting to the nearest electric grid from a remote canyon in northern New Mexico would have cost more than \$1 million. The eight solar arrays mounted on trackers follow the sun throughout the day. *[Photo courtesy Siemens Solar Industries]*

▷ By covering the 2,400 square foot lunch eating area at Teofilo Mendoza Elementary School in Imperial Beach, California, with PV (Solar Utility's Uni-Solar panels), shelter is provided and electricity is produced using what would have been otherwise wasted roof space. *[Photo courtesy Solar Utility]*



▷ This Rikers Island (New York) facility incorporates BIPV (building integrated photovoltaics). The panels serve as roofing, as skylighting, and as a power source. The Atlantis Energy modules consist of translucent PV designed as multifunctional glazing material. *[Photo courtesy Atlantis Energy]*



△ In partnership with Southern California Edison and the Department of Energy, the Solar Utility team installed a state-of-the-art photovoltaic distributed generation system at the world-renowned Huntington Library, Art Collections and Botanical Gardens. The system provides valuable support to the utility grid during peak load periods. *[Photo courtesy Solar Utility, Inc.]*

▽ PVI Photovoltaics International's SunFocus Power System™ installation at the Sacramento Municipal Utility District. This 20-panel system, consisting of 240 individual modules, has an output of 31kW of ac power. Each module tracks the sun as it arcs across the sky. The system provides peak load shaving to SMUD and its customers seeking green power. *[Photo courtesy of PVI Photovoltaics International]*



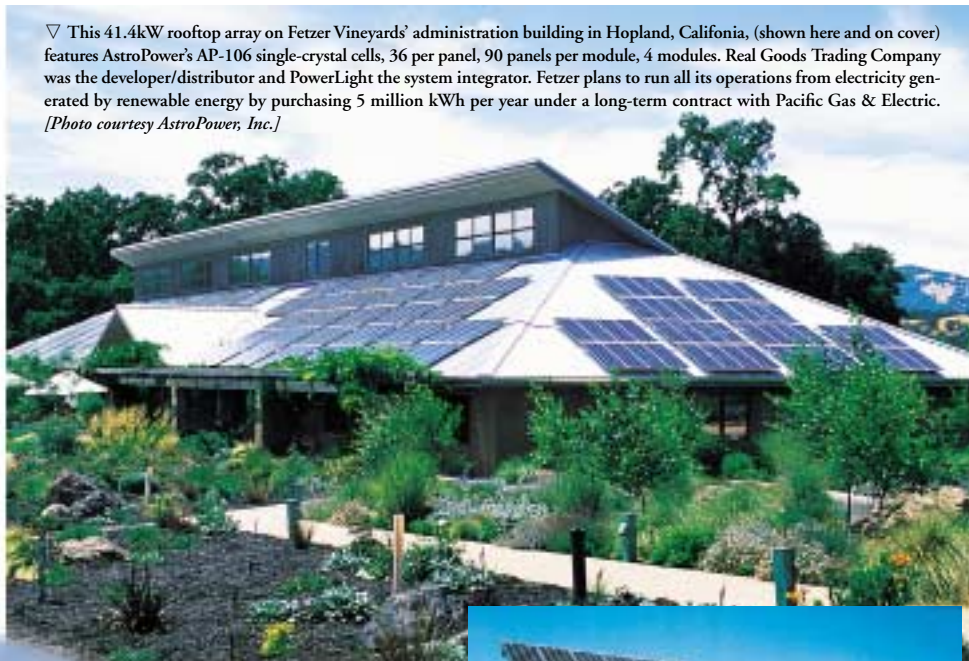


▽ This 41.4kW rooftop array on Fetzer Vineyards' administration building in Hopland, California, (shown here and on cover) features AstroPower's AP-106 single-crystal cells, 36 per panel, 90 panels per module, 4 modules. Real Goods Trading Company was the developer/distributor and PowerLight the system integrator. Fetzer plans to run all its operations from electricity generated by renewable energy by purchasing 5 million kWh per year under a long-term contract with Pacific Gas & Electric. [Photo courtesy AstroPower, Inc.]



△ The engineering lab at the University of California, Irvine, uses Uni-Solar structural standing seam roofing panels. The project was performed by Solar Utility Inc. of Culver City, California. The installation provides up to 6kW of grid-connected solar electricity for the building, with surplus power fed back into the electric grid. This installation was made under a contract to Southern California Edison. [Photo courtesy United Solar Systems Corp.]

△ The City of Tucson Southeast Service Center (Ward 4) hosts a grid-tied 5kW PV system. With estimated peak daytime electrical loads at about 7kW, this system provides a significant portion of the facility's energy requirements. A data acquisition system designed and installed by the Southwest Technology Development Institute, New Mexico State University, allows remote monitoring of system performance. [Photo courtesy Southwest Technology Development Institute]



▷ Bluffview Elementary School, Columbus, Ohio, a 2kW conventional power system by BP Solar, Inc. [Photo courtesy BP Solar, Inc.]



◁ Siemens modules electrify this facility on Fox Island, just on the Virginia side of the Virginia/Maryland line, Chesapeake Bay. The system powers 20-watt fluorescent lights, a marine radio, refrigeration, and a wastewater treatment system. Atlantic Solar, Baltimore, Maryland, provided the system for the Chesapeake Bay Foundation. [Photo courtesy Atlantic Solar]

